

Comments on Early Herpetological publications about Prince Edward Island, Atlantic Canada

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Prince Edward Island, in the Gulf of St. Lawrence, is Canada's smallest province, with an area of 5660 km². Its herpetofauna is relatively depauperate. Ten species of amphibians and three species of snakes have been verified for the province (McAlpine et al. 2006; Rodrigue and Desroches 2018). The most comprehensive publications devoted specifically to P.E.I. are those of Cook (1960, 1967) who, along with Bleakney (1958) in his treatment of eastern Canada as a whole, provided a historical overview of studies on the herpetology of the province. They cited the works of Mellish ("1876" [sic] 1877) on snakes, Bain (1890) on the herpetofauna in general, and Hurst (1944) on amphibians — all dedicated to Prince Edward Island specifically. They additionally cited several papers by Philip Cox (1847–1939), an educator and naturalist from New Brunswick who was one of the founders of the Miramichi Natural History Association (Hamilton 2013) and collected on Prince Edward Island with Roy McLean Van Wart [Vanwart] (1877–1957) in 1896. Cox's herpetological records from P.E.I. were included in geographically broader publications on the herpetofauna of the Gaspé Peninsula and the Maritimes (1899a, 1899b, 1899c, 1903) or Canada as a whole (1907).

Cook (1967) wrote "J.T. Mellish (1876) was probably the first author to publish on the Island herpetology." However, a far earlier overview of the herpetofauna of P.E.I. was included by Stewart (1806) in *An Account of Prince Edward Island* (Fig. 1). Moriarty and Bauer (2024) included this work in their bibliography of P.E.I. herpetofaunal works, but the book has otherwise been uncited in the herpetological literature, and I take this opportunity to summarize its relevant content.

John Stewart (c. 1758–1834) was born in Kintyre, Scotland and came to Prince Edward Island in 1775 when his father was appointed Chief Justice of the colony. At the time, the Island was known as St. John's Island, and only 12 years had passed since it (as Île Saint-Jean) had been ceded by France to Britain at the close of the Seven Years' War (the North American theater of which is commonly referred to in the United States as the French and Indian War) in 1763. For the next six years it was governed as part of the colony of Nova Scotia, but in 1769 it attained the status of a separate colony, although the current name of Prince Edward Island

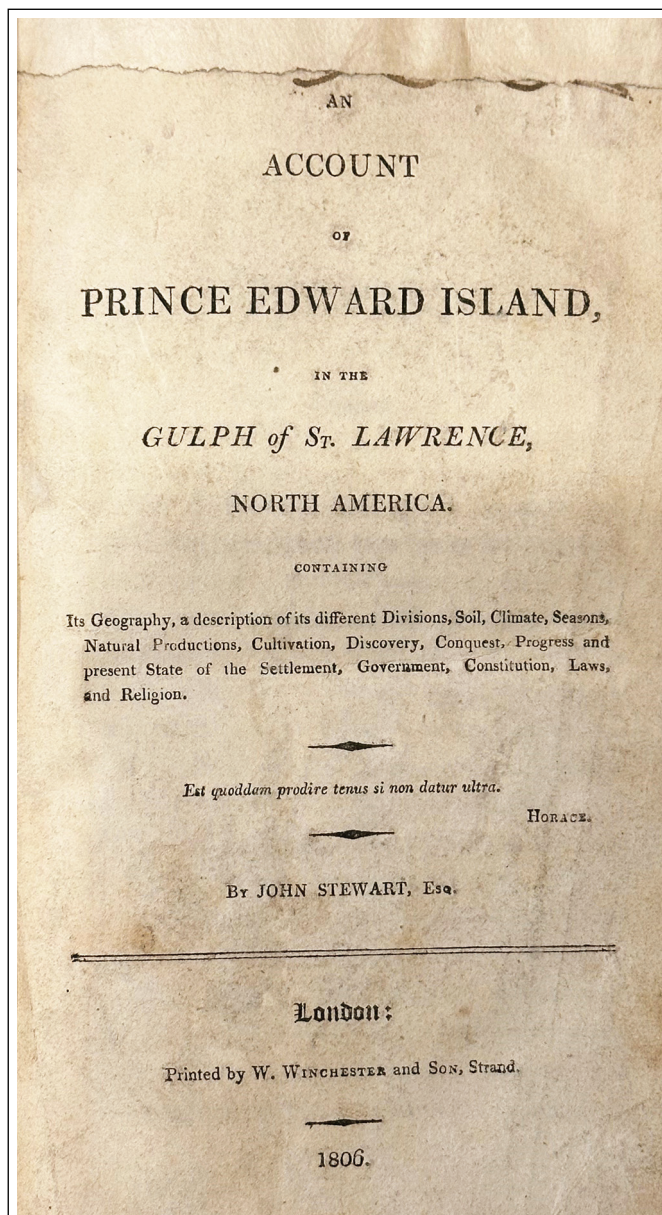


Fig. 1. Title page of Stewart's (1806) *An Account of Prince Edward Island in the Gulf of St. Lawrence, North America*. Collection of author.

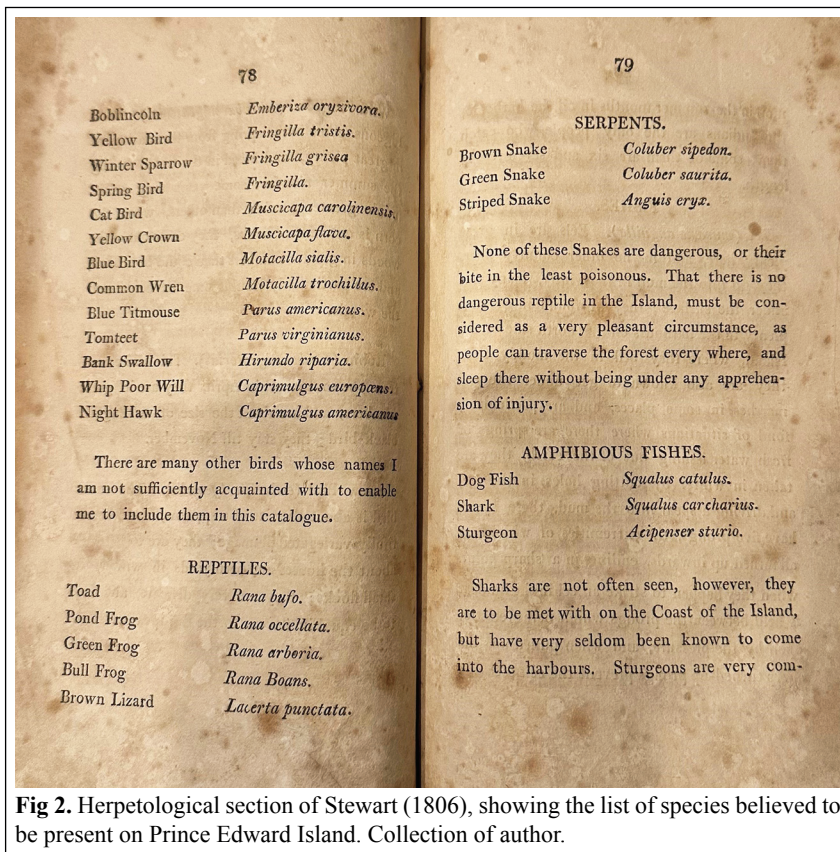


Fig 2. Herpetological section of Stewart (1806), showing the list of species believed to be present on Prince Edward Island. Collection of author.

was not adopted until 1798. Stewart was a major landowner and highly active in the politics of the Island. His career was characterized by a series of disputes and controversies that saw his influence ebb and flow. Stewart's book was written during the period (1804–1817) in which he was Paymaster General of British Forces in Newfoundland and divided his time between St. John's, Newfoundland and London. However, he returned to P.E.I. permanently in 1824 and in that decade served as both Speaker of the Assembly and Receiver General of Quitrents [a quitrent was a tax due to the government in lieu of performing services otherwise due] (Pigot 1975, 1987).

Stewart's book made him known as the first Island historian, but his documentation of natural history during this early period has also been considered to be an important contribution (Pigot 1987). The book includes a chapter (pp. 59–94) entitled: "Native Animals, Birds, Fishes, Reptiles and Insects." On p. 78 is a list of "Reptiles" and on the following page, a list of "Serpents." The only text beyond the list is Stewart's statement that there are no dangerous reptiles among those listed (Fig. 2). This statement, quoted in Pigot (1975) — a self-published book on the history of Mount Stewart, P.E.I., is the only mention of the herpetological content of Stewart (1806) that seems to have been reproduced in the literature in more than two centuries.

Stewart had no biological training, but as a long-time resident of Prince Edward Island he likely based his statements on his own observations and those of other eyewitnesses.

However, writing at the outset of the 19th century, his resources for the identification of the local species would have been limited. Stewart noted (1806: 59) that his catalogue of species was "arranged in the order of Linnaeus." Indeed, all of the names are combinations used by Linnaeus. Presumably Stewart had access to the 12th edition of *Systema Naturae* (Linnaeus 1766) or some distillation thereof, because one of the names he used, *Coluber saurita*, was only proposed in that work but was absent from the 10th edition (Linnaeus 1758). At that time, little had been published on the herpetology of what would become Canada, and even perhaps the most relevant work for P.E.I. — Pennant's (1787) *Supplement to Arctic Zoology*, which explicitly included British North America, itself drew largely on Linnaeus (1758), as well as Catesby (1734–1743, 1747), Lawson (1709) and other earlier sources, mostly from the American southeast. However, there is no evidence that Stewart had access to or used a copy of Pennant's work.

Stewart apparently selected the names that he thought fit the local species, although in many cases he was far off in his application.

His vernacular names provide a better guide to the actual species intended, particularly for the snakes. I have equated Stewart's names with the species known from Prince Edward Island in Table 1. Some, like *Rana bufo* (Toad) for *Anaxyrus americanus*, are quite obvious but others need some explanation. Because there are no lizards native to P.E.I., *Lacerta punctata* must refer to a salamander and "Brown Salamander" eliminates the two local ambystomatids. Only *Notophthalmus viridescens* qualifies as brownish and spotted and indeed, *L. punctata* was also the name applied by Pennant (1787) to this species. The remaining anurans pose the greatest challenge. *Rana ocellata* [sic] can only apply to *Lithobates pipiens*, given that *L. palustris*, the only other possibility, was only recently confirmed to be present in bog habitat on the Island and would have certainly escaped the notice of early casual naturalists. The nomina *Rana arboria* [sic] and *Rana Boans* both actually apply to hylid frogs, but there is only one hylid on the Island and it fits neither of Stewart's (1806) common names particularly well (Green Frog and Bull Frog, respectively). On the other hand, *Lithobates clamitans* is both green and has a much louder call than does *Pseudacris crucifer*. With some hesitation I equate Stewart's *R. Boans* with *L. clamitans* and *R. arboria* with *P. crucifer*.

Although concise, the herpetological section provides Latin names for the species recorded (Table 1), which makes this not only the first work on Prince Edward Island to do so, but one of the earliest, if not the earliest, in any work devoted to an area that would eventually become part of the nation

Table 1. Stewart's (1806) list of herpetological taxa in relation to the amphibians and reptiles now recognized from Prince Edward Island.

Currently Recognized on PEI	Stewart (1806)	Linnean Identity	"First" Published Record
<i>Notophthalmus viridescens</i>	<i>Lacerta punctata</i> (Brown Lizard)	<i>Riopa punctata</i> (Linnaeus, 1758)	Cox (1899c)
<i>Ambystoma laterale</i>			Hurst (1946) ¹
<i>Ambystoma maculatum</i>			Cox (1899b) ²
<i>Plethodon cinereus</i>			Bain (1890) ³
<i>Anaxyrus americanus</i>	<i>Rana bufo</i> (Toad)	<i>Bufo bufo</i> (Linnaeus, 1758)	Bain (1890)
<i>Lithobates clamitans</i>	<i>Rana Boans</i> (Bull Frog) ⁴	<i>Boana boans</i> (Linnaeus, 1758)	Cox (1899a)
<i>Lithobates palustris</i>			McAlpine et al. (2006) ⁵
<i>Lithobates pipiens</i>	<i>Rana ocellata</i> (Pond Frog)	<i>Osteopilus ocellatus</i> (Linnaeus, 1758)	Bain (1890) ⁶
<i>Lithobates sylvaticus</i>			Bain (1890)
<i>Pseudacris crucifer</i>	<i>Rana arboria</i> (Green Frog) ⁴	<i>Hyla arborea</i> (Linnaeus, 1758)	Bain (1890)
<i>Thamnophis sirtalis</i>	<i>Anguis eryx</i> (Striped Snake)	<i>Anguis fragilis</i> Linnaeus, 1758	Mellish (1877)
<i>Storeria occipitomaculata</i>	<i>Coluber sipedon</i> (Brown Snake)	<i>Nerodia sipedon</i> (Linnaeus, 1758)	Mellish (1877)
<i>Opheodrys vernalis</i>	<i>Coluber saurita</i> (Green Snake)	<i>Thamnophis saurita</i> (Linnaeus, 1766)	Mellish (1877) ⁷

¹Initially reported as *Ambystoma jeffersonianum*. Subsequently, P.E.I. specimens were redetermined as *A. laterale* on the basis of chromosomal data by Uzzell (1962, 1964) and by Cook (1960, 1967) on the basis of morphology and coloration.

²Cox (1899c) did not explicitly mention its occurrence on P.E.I. but called it "common in the maritime provinces." Cox (1907) subsequently explicitly noted its presence on the Island.

³Cook (1967) considered Bain's (1890) mention of a salamander being "found under stones and stumps" to refer to this species, although the first record explicitly attributed to *Plethodon cinereus* was by Cox (1899c).

⁴See text for discussion.

⁵Cox (1899a, b) reported *R. palustris* as "rare" or "very rare" in P.E.I. and Hurst (1944) subsequently also reported it from the Island. Cook (1967), however, provided detailed arguments against accepting these unvouchered records as evidence of the species occurrence.

⁶Cook (1967) considered Bain's (1890) reference to "Green and bronze-coloured Frogs" to apply to *Lithobates pipiens*. However, this description is far more apt for *L. clamitans*. Cook was likely swayed by Bain's comment that these frogs were "found in damp grass fields." Cox (1899a) was the first to explicitly note the occurrence of *L. pipiens* in P.E.I. (as *Rana v. virescens*).

⁷*Opheodrys vernalis* was mentioned only in a footnote by Mellish (1877) who noted that it had been present on the Island in the 1820s or 30s. Bain (1890) subsequently considered it rare in P.E.I., but this information was based directly on Mellish (1877). Although Cox (1903) described it as "fairly common" throughout the Maritimes he made no explicit mention of P.E.I. and the continued occurrence of the species was not verified by vouchered records until the 1960s (Thomas 1965).

of Canada. Further, it would stand as the only such list for P.E.I. for more than a century. The work of Mellish (1877) dealt only with snakes and that of Bain (1890) gave only common names and an imprecise count of species. Even the more "scientific" work of Cox was not consistently explicit about which species occurred in Prince Edward Island. For example, *Bascanion constrictor* (= *Coluber constrictor*) was stated to be absent from P.E.I. (Cox 1903) and *Rana palustris* (= *Lithobates palustris*) rare (Cox 1899a, b), but many species were simply stated to be widespread in the Maritime Provinces, leaving their presence on the Island ambiguous. Indeed, it was not until Hurst (1944) that an actual provincial summary of amphibian species was published. Another decade passed before the first point locality maps to include P.E.I. records was published (Logier and Toner 1955) and not until Bleakney (1958) was a "complete" provincial list presented, subsequently updated by Cook (1967). Only in 2003 was the herpetofaunal species list of P.E.I. finalized, with the confirmed discovery of *Lithobates palustris* (McAlpine et al. 2006).

John Thomas Mellish (1841–1924), the author of the second work on the P.E.I. herpetofauna (Mellish 1877) was born in Pownal, P.E.I. and educated at Mount Allison College (now Mount Allison University) in Sackville, New Brunswick. His early career was in education, and he served as a teacher and administrator at several institutions in Nova Scotia (Rose 1888). Mellish served as Secretary of the Nova Scotian Institute of Natural Science, in the Transactions of which he published on fish and fisheries (Mellish 1882) in addition to snakes. He was later admitted to the bar and during World War I he served in the War Office in London, England before retiring to Vancouver, British Columbia (Anonymous 1924).

Interestingly Mellish (1877) mentioned five snakes for Prince Edward Island, including all three that are actually present (*Storeria occipitomaculata*, *Thamnophis sirtalis* [as *Eutaenia sirtalis*] and *Opheodrys vernalis* [as *Chlorosoma vernalis*]). One of the others was *Bascanion constrictor* = *Coluber constrictor*. Cook (1967) convincingly debunked Mellish's racer record, which was the source for several later

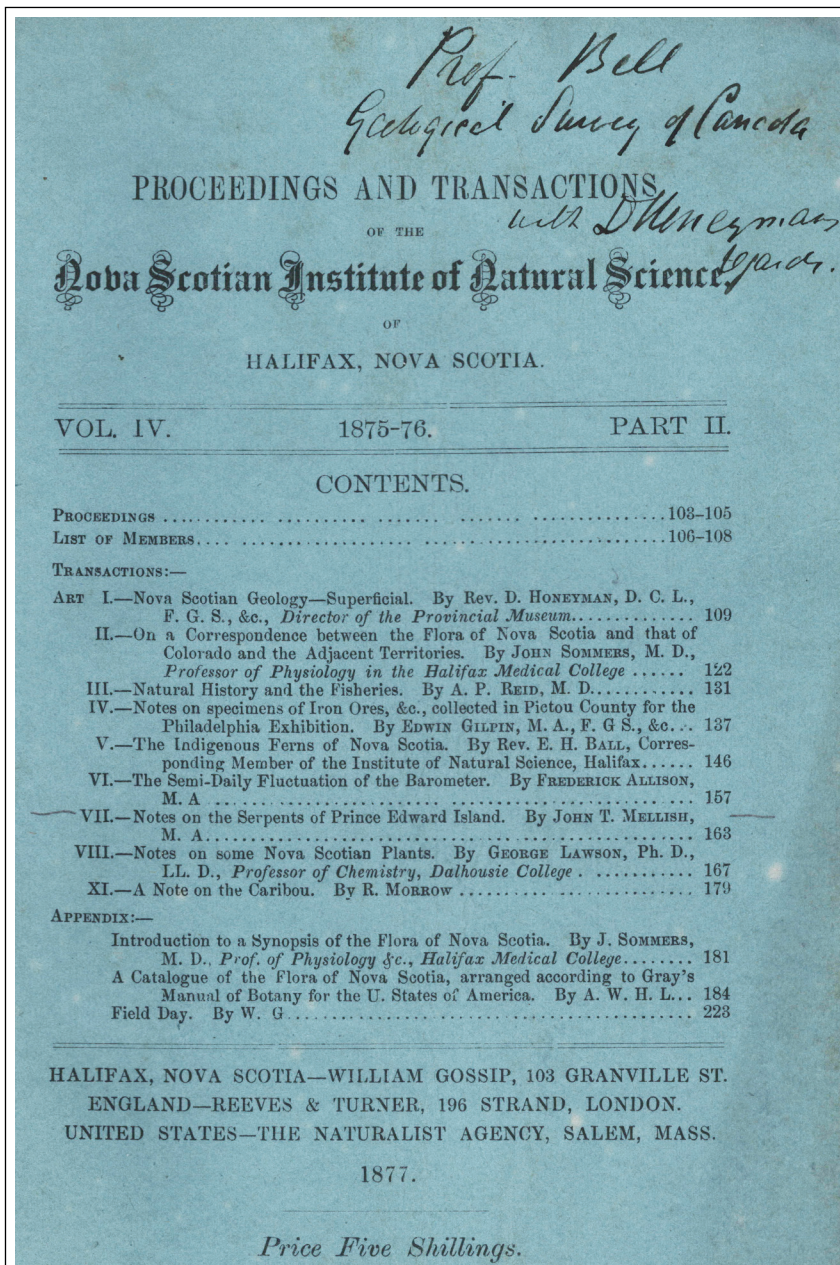


Fig. 3. Cover of Volume 4, Part II. of *Proceedings and Transactions of the Nova Scotian Institute of Natural Science* for 1875–76, showing Mellish’s paper (Article VII) and the publication date of 1877. The dedication is from David Honeyman (1817–1889), the director of the Nova Scotia Provincial Museum to Prof. Robert Bell (1841–1917) of the Geological Survey of Canada. Collection of author.

citations of its occurrence on the Island. The fifth purported taxon was “*Coluber lineatus* ?.” As argued by Cook (1967), this is almost certainly a reference to particularly boldly striped individuals of *Thamnophis sirtalis*. He also noted that there appears to be no earlier references to Mellish’s nomen, which was not a reference to *Coluber lineatus* Linnaeus, 1758 = *Lygophis lineatus*, but rather was intended as a new name. Subsequently, on the basis of geography, Boundy (1999) recognized *C. lineatus* Mellish, 1876 [sic] as a senior subjective synonym of the currently valid garter snake sub-

species *T. s. pallidulus* Allen, 1899, but, as it is also a junior primary homonym of *Coluber lineatus* Linnaeus, 1758, it does not endanger Allen’s name. Cook (2007) and Wallach et al. (2014) appear to be the only other authors to have acknowledged the existence of Mellish’s name. All of these authors cited the date of Mellish’s description as 1876. As another minor correction to the literature of Prince Edward Island, I note that although the paper was read on May 8th, 1876, as printed on the first page of the paper, it was not published until 1877, as shown by the front cover of the issue of *Proceedings and Transactions of the Nova Scotian Institute of Natural Science* in which it appeared (Fig. 3).

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- les Grains, les Legumes, les Racines, &c. Le tout est Precedé d'une Carte Nouvelle & Exacte des Païs dont ils s'Agist. Tome II.* The Author, London. [4] + 100 pp., 100 pls., 20 pp., 20 pls., [7] pp., 1 map.
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